

SCHMIDT ET AL. -- 09/806,564  
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**IN THE SPECIFICATION:**

**Abstract of the Disclosure**

Provided is a method for characterizing a polypeptide or a population of polypeptides, which method comprises: (a) contacting a sample comprising one or more polypeptides with a first cleavage agent to generate polypeptide fragments; (b) isolating one or more polypeptides fragments, each fragment comprising the N-terminus or the C-terminus of the polypeptide from which it was fragmented; (c) identifying the isolated fragments by mass spectrometry; (d) repeating steps (a)-(c) on the sample using a second cleavage agent that cleaves at a different site from the first cleavage agent; and (e) characterizing the one or more polypeptides in the sample from the fragments identified in steps (c) and (d).